September 13, 2002
Project No. 0081300-04

JUNE 2002 GROUNDWATER MONITORING REPORT

Yeoman Creek Landfill Superfund Site
Waukegan, Illinois

Prepared For:

Mr. John Seymour, P.E.
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File 0081300-04

Mr. John Seymour, P.E.
YCRG Project Coordinator
GeoSyntec Consultants
55 W. Wacker Drive, Suite 1100
Chicago, IL 60601

Subject: JUNE 2002 GROUNDWATER MONITORING REPORT
Yeoman Creek Landfill Superfund Site
Waukegan, Illinois

Dear Mr. Seymour:

Weaver Boos & Gordon, Inc. (Weaver Boos), sub-consultant to TJ Lambrecht Construction, Inc., has completed the above referenced monitoring for the Yeoman Creek Landfill Superfund Site located in Waukegan, Illinois. The Yeoman Creek Superfund Site (YCS Site) includes Yeoman Creek Landfill, Edwards Field Landfill, and Rubloff Landfill.

June 2002 Monitoring Event

Weaver Boos was represented at the YCS Site to conduct the necessary fieldwork for groundwater and leachate sample collection and groundwater level measurements from June 21, 2002 to July 2, 2002, and on July 18, 2002. The subject monitoring event included a total of 72 monitoring locations as follows: 41 groundwater wells, 3 leachate wells, and 28 landfill gas probes (see **Figure 1**). A summary of the June 2002 Monitoring Event is provided as **Table 1**. Pursuant to United States Environmental Protection Agency (USEPA) Correspondence dated May 30, 2002, field parameters were obtained, but groundwater samples for subsequent laboratory analysis were not collected from the following locations:

MW-301	MW-C	MW-F	MW-405
MW-B	MW-D	MW-G	MW-406

Field work was performed in accordance with the site specific Field Sampling Plan (FSP) prepared by GeoSyntec Consultants, dated August 2001, and the Pre-Design Data Collection Activities Quality Assurance Project Plan (QAPjP) prepared by Parsons Engineering Sciences, Inc. dated August 1999. Deviations from the FSP are discussed in the following sections.

A representative from R.F. Weston was present on-site to oversee sampling activities and collect split samples on behalf of the USEPA. Samples collected by Weaver Boos were submitted to Severn Trent Laboratories in North Canton, Ohio, and analyzed for volatile organic compounds (VOCs), total and dissolved Metals and Cyanide.

Groundwater and Leachate Sampling

Depth to groundwater measurements were taken over a two day period at the beginning of the sampling event, prior to purging any of the wells so as to obtain measurements that would provide an accurate representation of the groundwater and leachate flow in the vicinity of the site (see **Table 2**).

The wells were purged with dedicated tubing and a peristaltic pump using a low-flow technique. A flow through cell was used to measure pH, temperature, dissolved oxygen, conductivity, and oxidation-reduction potential. Turbidity was measured using a separate turbidity meter. A colorimeter and mixing agents were used to field test for ferrous iron in accordance with the FSP. The wells were purged until field measurements were stable in accordance with the FSP. Field parameters are considered stabilized when three consecutive readings vary less than ±0.1 unit pH, ±10 percent of conductivity, ±0.5°C, and less than 10 NTU for turbidity. The final field measurements collected during purging are included on **Table 3**.

Groundwater samples were collected from 19 Shallow Zone monitoring wells, 14 Lower Outwash monitoring wells and leachate samples were collected from three leachate monitoring wells (See **Table 1**). Monitoring wells were purged and sampled in general accordance with the FSP. Samples were analyzed for site specific VOCs, metals (total and dissolved phases), and cyanide.

In accordance with the QAPjP, quality assurance/quality control (QA/QC) samples were collected during the sampling event. Six duplicate samples, five field blanks, five trip blanks,

two equipment blanks and three matrix spike/matrix spike duplicates were collected for laboratory analysis.

As noted above, although groundwater samples were not collected from MW-301, MW-B, MW-C, MW-D, MW-F, MW-G, MW-405 and MW-406, field parameters were still measured at these locations.

Laboratory Analytical Results

Samples obtained from thirty-three (33) groundwater and three (3) leachate wells were analyzed for VOCs, total and dissolved metals, and cyanide. A summary of laboratory analytical results, field parameters, and results of the comparison to 35 IAC 620.410 Standards is included on **Table 3**. Exceedances of the 35 IAC 620.410 Standards are also summarized in **Figures 2** and **3**.

Leachate Wells

Leachate wells LW-101, LW-102 and LW-103, located on Edwards Field Landfill, were sampled during the subject sampling event. Leachate Wells LW-201 through 204, located on Yeoman Creek Landfill, were already abandoned at the time of sampling. The following parameters were detected in the leachate wells at concentrations above the Groundwater Quality Standards for Class I Potable Groundwater Resources (35 IAC 620.410):

Parameter	Units	LW-101	LW-102	LW-103
Benzene	ug/L		X	
Iron, total	mg/L	X	X	X
Lead, total	mg/L		X	X
Manganese, total	mg/L	X	X	X
Iron, dissolved	mg/L	X		X
Manganese, dissolved	mg/L	X	X	X

Lower Outwash Wells

The following constituents were detected in Lower Outwash wells above the Groundwater Quality Standards for Class I Potable Resources (35 IAC 620.410):

Location	Ni_T	Ni_D	Fe_D	Fe_T
MW-201	X	X		
MW-209			X	
MW-401			X	X

Ni_T - Nickel, Total
Fe_D - Iron, Dissolved
Fe_T - Iron, Total
Mn_T - Manganese, Total
Fe_D - Iron, Dissolved
Mn_D - Manganese, Dissolved
Ben - Benzene
Ni_D - Nickel, Dissolved
VC - Vinyl Chloride
As_T - Arsenic, Total
B_T - Boron, Total
As_D - Arsenic, Dissolved
B_D - Boron, Dissolved

Shallow Zone Wells

The shallow zone wells consist of wells screened in the lacustrine clays, organics, fluviolacustrine sands and upper outwash. The following constituents were detected in shallow zone wells above the Groundwater Quality Standards for Class I Potable Resources (35 IAC 620.410):

Location	Fe_T	Mn_T	Fe_D	Mn_D	Ben	VC	As_T	B_T	As_D	B_D
MW-102	X	X	X	X						
MW-104	X		X							
MW-106	X	X	X	X						
MW-110	X		X							
MW-111	X		X							
MW-202		X		X						
MW-206		X		X			X	X	X	X
MW-208	X	X	X	X						
MW-210	X	X	X	X		X				
MW-211	X		X	X						
MW-212	X	X	X	X						
MW-215	X	X	X	X	X					
MW-216	X	X	X	X		X				
MW-402	X	X		X				X		X

During the subject sampling event, vinyl chloride was observed in MW-210 at a concentration of 11 ug/L, similar to November 2001 where it was detected at 9.4 ug/L. Also, vinyl chloride was

not detected at or above the laboratory reporting limit of 1 ug/L in June 2002 at MW-103, where in November 2001 it was observed at a concentration of 5.4 ug/L.

Bedrock Well

MW-403 is the only monitoring well screened in bedrock. No exceedances of the Groundwater Quality Standards for Class I Potable Resources (35 IAC 620.410) were identified for this well during the subject sampling event. Low flow sampling utilizing a peristaltic pump was unable to be accomplished at MW-403, because the depth to groundwater was 102.25' below ground surface. Therefore, MW-403 was purged and sampled using a polyethylene bailer consistent with previous sampling rounds.

Potentiometric Surface Maps

The depth to groundwater data from the wells screened within the lower outwash was used to generate a groundwater potentiometric surface map. As shown on **Figure 4**, groundwater flow for the lower outwash is towards the east. The depth to groundwater data from the leachate wells and the landfill gas probes was used to create **Figure 5** Potentiometric Surface Map for Leachate Wells. The leachate contours at Edwards Field show a leachate gradient extending to the west and northwest.

Data Validation

Exponent of Lake Oswego, Oregon completed validation of the analytical results. Full data validation was completed on ten percent of the data, and the remainder of the data was reviewed for holding times, sample temperature, sample, receipt, chain-of-custody, etc. Data validation was completed in accordance with *Laboratory Data Validation Functional Guidelines for Evaluating Organic Analysis* (USEPA, February 1994), and *Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analysis* (USEPA, February 1994). Full data validation was performed for analytical results from the following wells: MW-103, MW-210, MW-216, MW-A, MW-E2, and LW-101. Exponent's data validation report is included as **Attachment 1**. Spreadsheets that include both the laboratory and data validation qualifiers are included on the enclosed compact disc. The data validation did not alter the analytical results originally reported by the laboratory, but merely added certain qualifiers to the data. Therefore, results of the data validation do not influence the analytical results summarized on **Table 4**.

We trust that this information is sufficient for your needs at this time. If you have any questions, comments, or suggestions regarding the data presented in this groundwater report, please contact us at your convenience.

Very truly yours,

Weaver Boos & Gordon, Inc.

Brittany Griffin
Staff Scientist

Michael B. Maxwell, LPG
Project Manager

Attachments:

Tables 1-4
Figures 1-5
Attachment 1 – Data Validation Report (includes one CD containing spreadsheets with data qualifiers)

Tables

Table 1
Summary of Quarterly Monitoring - June 2002
Yeoman Creek Landfill
Waukegan, Illinois

Sample Description	Water Levels	Field Parameters	VOCs, Metals, & Cyanide*
Groundwater Monitoring Wells			
MW-101	X	X	X
MW-102	X	X	X
MW-103	X	X	X
MW-104	X	X	X
MW-105	X	X	X
MW-106	X	X	X
MW-107	X	X	X
MW-108	X	X	X
MW-109	X	X	X
MW-110	X	X	X
MW-111	X	X	X
MW-201	X	X	X
MW-202	X	X	X
MW-203	X	X	X
MW-204	X	X	X
MW-205	X	X	X
MW-206	X	X	X
MW-207	X	X	X
MW-208	X	X	X
MW-209	X	X	X
MW-210	X	X	X
MW-211	X	X	X
MW-212	X	X	X
MW-213	X	X	X
MW-214	X	X	X
MW-215	X	X	X
MW-216	X	X	X
MW-301	X	X	
MW-401	X	X	X
MW-402	X	X	X
MW-403	X	X	X
MW-405	X	X	
MW-406	X	X	
MW-A	X	X	X
MW-B	X	X	
MW-C	X	X	
MW-D	X	X	
MW-E1	X	X	X
MW-E2	X	X	X
MW-F	X	X	
MW-G	X	X	
Leachate Monitoring Wells			
LW-101	X	X	X
LW-102	X	X	X
LW-103	X	X	X

* Samples were analyzed for VOCs, metals (total and dissolved phases) and cyanide as listed on Table A2, Initial Parameter List, Yeoman Creek Landfill Superfund Site, Waukegan, Illinois, provided by GeoSyntec Consultants.

Table 1
Summary of Quarterly Monitoring - June 2002
Yeoman Creek Landfill
Waukegan, Illinois

Sample Description	Water Levels	Field Parameters	VOCs, Metals, & Cyanide*
Landfill Gas Probes			
LFG-101	X		
LFG-102	X		
LFG-103	X		
LFG-104	X		
LFG-105	X		
LFG-106	X		
LFG-107	X		
LFG-108	X		
LFG-109	X		
LFG-110	X		
LFG-111	X		
LFG-201	X		
LFG-202	X		
LFG-203	X		
LFG-204	X		
LFG-205	X		
LFG-206	X		
LFG-207	X		
LFG-208	X		
LFG-211	X		
LFG-216	X		
LFG-218	X		
LFG-219	X		
LFG-220	X		
LFG-221	X		
LFG-222	X		
LFG-223	X		
LFG-224	X		

* Samples were analyzed for VOCs, metals (total and dissolved phases) and cyanide as listed on Table A2, Initial Parameter List, Yeoman Creek Landfill Superfund Site, Waukegan, Illinois, provided by GeoSyntec Consultants.

Table 2
Summary of Groundwater Elevations
Second Quarter 2002 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Location ID	Top of PVC* (MSL)	Total Well Depth* (feet)	Depth to Water 06-02 (feet)	Groundwater Elevation 06-02 (MSL)
Shallow Zone Wells				
Lacustrine Clays, Organics, Sand Lenses				
MW-204	662.45	22.54	15.10	647.35
MW-206	663.75	21.18	9.70	654.05
MW-208	659.31	21.36	8.10	651.21
MW-402	657.25	20.11	4.50	652.75
Fluviolacustrine Sands				
MW-102	653.53	23.71	6.40	647.13
MW-104	652.53	25.12	5.00	647.53
MW-106	654.96	20.09	6.60	648.36
MW-107	656.46	21.59	9.40	647.06
MW-108	654.59	25.15	10.30	644.29
MW-110	653.18	25.05	5.40	647.78
MW-111	655.64	25.20	9.00	646.64
MW-202	660.01	27.52	8.00	652.01
MW-210	651.81	25.06	9.27	642.54
MW-211	658.81	41.79	10.50	648.31
MW-212	658.87	18.76	11.20	647.67
MW-214	653.54	24.18	5.10	648.44
MW-215	654.80	20.09	6.00	648.80
MW-216	657.47	24.40	10.00	647.47
Upper Outwash				
MW-406	661.19	33.07	17.41	643.78
MW-E1	664.75	33.80	20.85	643.90
MW-G	664.96	23.88	6.10	658.86

* - Top of PVC and Total Well Depth Information for groundwater wells provided by Parsons Engineering Sciences, Inc.

Table 2
Summary of Groundwater Elevations
Second Quarter 2002 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Location ID	Top of PVC* (MSL)	Total Well Depth* (feet)	Depth to Water 06-02 (feet)	Groundwater Elevation 06-02 (MSL)
Landfill Gas Probes				
LFG-101	652.77	9.80	7.40	645.37
LFG-102	654.01	9.90	6.80	647.21
LFG-103	655.37	11.20	9.40	645.97
LFG-104	654.23	10.00	9.60	644.63
LFG-105	654.55	8.70	8.30	646.25
LFG-106	653.93	10.30	9.20	644.73
LFG-107	652.64	10.20	9.10	643.54
LFG-108	654.44	9.90	9.40	645.04
LFG-109	652.39	7.40	5.60	646.79
LFG-110	652.19	10.94	8.96	643.23
LFG-111	654.01	10.00	9.40	644.61
LFG-201	660.68	10.30	9.80	650.88
LFG-202	662.33	9.90	7.70	654.63
LFG-203	663.76	10.90	9.40	654.36
LFG-204	658.34	11.00	10.00	648.34
LFG-205	656.72	9.90	9.40	647.32
LFG-206	659.46	10.30	9.80	649.66
LFG-207	657.02	10.30	9.80	647.22
LFG-208	657.80	10.40	9.90	647.90
LFG-211	660.81	10.20	9.00	651.81
LFG-216	656.62	10.10	9.60	647.02
LFG-218	662.19	10.20	9.90	652.29
LFG-219	661.83	10.10	9.60	652.23
LFG-220	660.32	10.10	Dry	Dry
LFG-221	660.04	10.20	9.30	650.74
LFG-222	663.38	10.00	9.30	654.08
LFG-223	660.83	9.90	9.00	651.83
LFG-224	665.28	9.60	9.20	656.08

* - Top of PVC and Total Well Depth Information for groundwater wells provided by Parsons Engineering Sciences, Inc.

Table 3
Summary of Analytical Results
Second Quarter 2002 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	MW-101	MW-102	MW-103	MW-104	MW-105	MW-106	MW-107	MW-108	MW-109	MW-110	MW-111	MW-201	MW-202	MW-203	MW-204	MW-205
				LO	SZ	LO	SZ	LO	SZ	SZ	SZ	LO	SZ	SZ	LO	SZ	LO	SZ	LO
Field Parameters																			
Dissolved Oxygen	mg/L	NA	NA	0.00	0.41	0.00	NA	5.05	8.60	0.00	5.60	0.00	0.03	0.00	0.04	0.00	0.63	0.00	0.00
Ferrous Iron	ppm	NA	NA	3.27	9.20	0.51	6.30	0.08	15.60	3.11	2.08	2.75	5.60	14.92	0.44	4.65	0.00	1.33	4.19
pH	s.u.	6.5-9.0	NA	7.17	7.05	8.33	7.08	7.27	6.73	7.05	7.39	7.19	7.15	6.78	7.35	6.78	8.07	7.32	7.08
Redox Potential	mV	NA	NA	-105	-101	46	-113	-96	-90	-104	-98	-110	-100	-103	59	-103	-21	-130	-120
Specific Conductivity	umhos	NA	NA	1430	1130	1080	2210	1140	1730	915	939	1410	1410	1530	1640	5190	5060	1840	1570
Temperature	deg. C	NA	NA	12.31	10.87	12.67	11.08	12.20	11.27	10.98	10.83	12.23	12.97	12.06	12.40	12.70	13.82	13.50	14.86
Turbidity	ntu	NA	1	9.48	6.03	5.49	2.06	4.54	5.86	11.00	3.27	1.38	31.50	3.94	7.16	2.87	1.23	2.89	8.64
Volatile Organic Compounds																			
1,1,2,2-Tetrachloroethane	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	600	600	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene	ug/L	70	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	75	75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	ug/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	ug/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	ug/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	NA	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	NA	NA	<1	<1	<1	1.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	700	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Freon 113	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	100	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1000	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	2	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	ug/L	10000	10000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Metals/Inorganics - Total																			
Aluminum, total	mg/L	NA	NA	<0.2	0.45	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Antimony, total	mg/L	0.006	0.006	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic, total	mg/L	0.05	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01
Barium, total	mg/L	2	2	<0.2	<0.2	<0.2	0.68	0.34	0.25	<0.2	<0.2	<0.2	<0.2	0.36	0.22	0.65	<0.2	<0.2	0.65
Beryllium, total	mg/L	0.004	0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron, total	mg/L	2	NA	<0.2	0.24	0.30	1.20	0.28	0.24	0.25	<0.2	0.34	0.41	0.51	<0.2	0.63	0.27	<0.2	0.34
Cadmium, total	mg/L	0.005	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Calcium, total	mg/L	NA	NA	150	137	44.4	49.8	107	292	82.5	110	125	129	188	157	408	50.8	82.3	158

Notes:
Freon 113 is 1,1,2-Trichloro-1,2,2-trifluoroethane.
Exceedance of 35 IAC 620.410 Class I Standards indicated by *0.43*
Exceedance of 35 IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by **0.26**
NA - Not Available
NS - Not Sampled
LO - Lower Outwash
SZ - Shallow Zone

Table 3
Summary of Analytical Results
Second Quarter 2002 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	MW-101	MW-102	MW-103	MW-104	MW-105	MW-106	MW-107	MW-108	MW-109	MW-110	MW-111	MW-201	MW-202	MW-203	MW-204	MW-205
				LO	SZ	LO	SZ	LO	SZ	SZ	SZ	LO	SZ	SZ	LO	SZ	LO	SZ	LO
Metals/Inorganics - Total (continued)																			
Chromium, total	mg/L	0.1	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.036	<0.005	<0.005	<0.005	<0.005
Cobalt, total	mg/L	1	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Copper, total	mg/L	0.65	1.3	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Cyanide, total	mg/L	0.02	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01
Iron, total	mg/L	5	NA	4.1	*8.4*	0.28	*7.3*	3.5	*17.8*	4.0	2.4	3.1	*6.0*	*8.9*	0.36	4.4	<0.1	2.8	4.2
Lead, total	mg/L	0.0075	0.015	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Magnesium, total	mg/L	NA	NA	85.1	34.6	70.6	74.0	73.4	112.0	38.2	59.4	108.0	83.6	95.9	69.4	277	48.7	155	106
Manganese, total	mg/L	0.15	NA	0.064	*0.17*	<0.015	0.021	0.019	*0.29*	0.15	0.079	0.016	0.022	0.074	0.1	*0.48*	<0.015	0.062	<0.015
Mercury, total	mg/L	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel, total	mg/L	0.1	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	*0.5*	<0.04	<0.04	<0.04	<0.04
Potassium, total	mg/L	NA	NA	<5	<5	22.1	102	17.1	5.9	15.9	<5	<5	23.5	7.9	5.1	33.4	<5	6.5	<5
Selenium, total	mg/L	0.05	0.05	<0.005	<0.005	<0.005	<0.005	0.0057	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium, total	mg/L	NA	NA	132	148	140	239	67.9	80.1	43.2	64.5	109	123	62.4	210	651	26.8	227	101
Vanadium, total	mg/L	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc, total	mg/L	5	NA	<0.02	<0.02	0.043	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Metals - Dissolved																			
Aluminum, dissolved	mg/L	NA	NA	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.97
Antimony, dissolved	mg/L	0.006	0.006	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic, dissolved	mg/L	0.05	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01
Barium, dissolved	mg/L	2	2	<0.2	<0.2	<0.2	0.65	0.34	0.25	<0.2	<0.2	<0.2	<0.2	0.38	0.22	0.58	<0.2	<0.2	0.6
Beryllium, dissolved	mg/L	0.004	0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron, dissolved	mg/L	2	NA	<0.2	0.21	0.3	1.1	0.28	0.28	0.25	<0.2	0.34	0.41	0.54	0.14	0.7	0.27	<0.2	0.63
Cadmium, dissolved	mg/L	0.005	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Calcium, dissolved	mg/L	NA	NA	152	144	45.2	45.8	107	288	81.7	108	125	132	201	159	375	51.1	74.9	155
Chromium, dissolved	mg/L	0.1	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt, dissolved	mg/L	1	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Copper, dissolved	mg/L	0.65	1.3	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Iron, dissolved	mg/L	5	NA	4.1	*8.6*	<0.1	*6.6*	3.4	*17.6*	3.9	2.4	3.1	*5.5*	*9.4*	<0.1	1.9	<0.1	2.2	3.9
Lead, dissolved	mg/L	0.0075	0.015	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Magnesium, dissolved	mg/L	NA	NA	86.2	37.1	71.3	68.2	73.3	111	38.1	58.3	109	85.5	103	68.9	254	49.1	145	101
Manganese, dissolved	mg/L	0.15	NA	0.065	*0.17*	<0.015	0.015	0.019	*0.28*	0.15	0.073	0.016	0.022	0.079	0.11	*0.44*	<0.015	0.055	<0.015
Mercury, dissolved	mg/L	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel, dissolved	mg/L	0.1	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	*0.39*	<0.04	<0.04	<0.04	<0.04
Potassium, dissolved	mg/L	NA	NA	<5	<5	22.4	97.8	16.9	5.9	16.1	<5	<5	24	8.4	5	31.4	<5	6.1	<5
Selenium, dissolved	mg/L	0.05	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium, dissolved	mg/L	NA	NA	133	152	141	223	66.9	81	43.4	64.3	109	125	68.5	208	703	27	212	94.2
Vanadium, dissolved	mg/L	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc, dissolved	mg/L	5	NA	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Notes:

Freon 113 is 1,1,2-Trichloro-1,2,2-trifluoroethane. *0.43*

Exceedance of 35 IAC 620.410 Class I Standards indicated by **0.26**

Exceedance of 35 IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by

NA - Not Available

NS - Not Sampled

LO - Lower Outwash

SZ - Shallow Zone

Table 3
Summary of Analytical Results
Second Quarter 2002 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	MW-206	MW-207	MW-208	MW-209	MW-210	MW-211	MW-212	MW-213	MW-214	MW-215	MW-216	MW-301	MW-401	MW-402	MW-403	MW-405
				SZ	LO	SZ	LO	SZ	SZ	SZ	LO	SZ	SZ	SZ	LO	LO	SZ	LO	LO
Field Parameters																			
Dissolved Oxygen	mg/L	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	0.76	0.00	0.00	11.57	7.86
Ferrous Iron	ppm	NA	NA	12.37	3.21	20.40	106.00	11.64	14.84	18.26	0.05	1.50	17.24	NA	0.58	0.21	3.27	0.17	0.43
pH	s.u.	6.5-9.0	NA	7.40	7.02	6.64	6.92	6.76	6.73	6.62	7.20	7.59	6.84	6.81	7.62	6.88	7.40	8.54	7.87
Redox Potential	mV	NA	NA	-145	-92	-88	-58	-104	-115	-100	-32	-206	-104	-111	-8	104	-109	-14	-85
Specific Conductivity	umhos	NA	NA	2700	1390	1330	1250	2040	1390	980	1530	1070	5890	1320	152	1370	2060	5060	950
Temperature	deg. C	NA	NA	14.12	12.26	11.86	13.33	11.80	13.95	13.23	12.43	12.48	12.31	13.98	14.67	12.37	15.82	12.36	15.62
Turbidity	ntu	NA	1	7.36	0.74	1.87	4.68	0.00	1.93	2.26	2.01	2.63	3.87	3.61	64.60	4.16	25.00	NA	11.20
Volatile Organic Compounds																			
1,1,2,2-Tetrachloroethane	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
1,2-Dichlorobenzene	ug/L	600	600	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
1,2-Dichloroethane	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
1,2-Dichloroethene	ug/L	70	70	<1	<1	1.5	<1	14	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
1,4-Dichlorobenzene	ug/L	75	75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
2-Butanone	ug/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	NS
4-Methyl-2-Pentanone	ug/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	NS
Acetone	ug/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	NS
Benzene	ug/L	5	5	1.7	<1	2.1	<1	<1	1.5	2.7	<1	<1	**9.7**	<1	NS	<1	<1	<1	NS
Bromodichloromethane	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Chlorobenzene	ug/L	NA	100	<1	<1	10	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Chloroethane	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Chloroform	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Ethylbenzene	ug/L	700	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Freon 113	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Methylene chloride	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Styrene	ug/L	100	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Tetrachloroethene	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Toluene	ug/L	1000	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Trichloroethene	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	NS
Vinyl chloride	ug/L	2	2	<1	<1	<1	<1	**11**	<1	<1	<1	<1	<1	**3**	NS	<1	<1	<1	NS
Xylenes, total	ug/L	10000	10000	<1	<1	<1	<1	<1	<1	<1	<1	<1	26	<1	NS	<1	<1	<1	NS
Metals/Inorganics - Total																			
Aluminum, total	mg/L	NA	NA	0.41	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	NS	<0.2	<0.2	<0.2	NS
Antimony, total	mg/L	0.006	0.006	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01	<0.01	<0.01	NS
Arsenic, total	mg/L	0.05	0.01	**0.26**	<0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	NS	<0.01	<0.01	<0.01	NS
Barium, total	mg/L	2	2	0.2	0.26	0.22	<0.2	<0.2	0.35	0.2	0.2	0.21	0.27	<0.2	NS	0.66	0.22	<0.2	NS
Beryllium, total	mg/L	0.004	0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	<0.005	NS
Boron, total	mg/L	2	NA	*31.5*	0.36	0.55	<0.2	<0.2	0.25	<0.2	0.42	<0.2	0.52	<0.2	NS	0.63	*3.8*	0.84	NS
Cadmium, total	mg/L	0.005	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NS	<0.002	<0.002	<0.002	NS
Calcium, total	mg/L	NA	NA	179	136	195	167	201	143	152	155	98.4	255	180	NS	118	333	15.5	NS

Notes:

Freon 113 is 1,1,2-Trichloro-1,2,2-trifluoroethane.

Exceedance of IAC 620.410 Class I Standards indicated by *0.43*

Exceedance of IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by **0.26**

NA - Not Available

NS - Not Sampled

Table 3
Summary of Analytical Results
Second Quarter 2002 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	MW-206	MW-207	MW-208	MW-209	MW-210	MW-211	MW-212	MW-213	MW-214	MW-215	MW-216	MW-301	MW-401	MW-402	MW-403	MW-405
				SZ	LO	SZ	LO	SZ	SZ	SZ	LO	SZ	SZ	SZ	LO	LO	SZ	LO	LO
Metals/Inorganics - Total (continued)																			
Chromium, total	mg/L	0.1	0.1	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	0.0078	<0.005	NS
Cobalt, total	mg/L	1	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05	<0.05	<0.05	NS
Copper, total	mg/L	0.65	1.3	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NS	<0.025	<0.025	<0.025	NS
Cyanide, total	mg/L	0.02	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01	<0.01	<0.01	NS
Iron, total	mg/L	5	NA	3.5	3	*19.2*	2.5	*8.2*	*14.6*	*24.1*	0.1	1.4	*6.1*	*17.8*	NS	*8.0*	*26.7*	0.25	NS
Lead, total	mg/L	0.0075	0.015	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	NS	<0.003	<0.003	<0.003	NS
Magnesium, total	mg/L	NA	NA	177	77.4	108	68.9	95.7	74	52.3	65.5	62.7	111	72.4	NS	69.7	84.5	8.8	NS
Manganese, total	mg/L	0.15	NA	*0.22*	0.028	*0.45*	0.089	*0.26*	0.14	*0.40*	0.14	0.021	*0.19*	*0.21*	NS	0.033	*1.20*	<0.015	NS
Mercury, total	mg/L	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NS	<0.0002	<0.0002	<0.0002	NS
Nickel, total	mg/L	0.1	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.054	<0.04	NS	<0.04	<0.04	<0.04	NS
Potassium, total	mg/L	NA	NA	60	26.1	22	<5	5.1	19.2	<5	12	<5	126	6.9	NS	36	9.6	<5	NS
Selenium, total	mg/L	0.05	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	0.0073	NS
Sodium, total	mg/L	NA	NA	176	74.6	29.2	59.4	58.9	53	25	147	55.9	825	44.9	NS	67.1	133	109	NS
Vanadium, total	mg/L	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05	<0.05	<0.05	NS
Zinc, total	mg/L	5	NA	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NS	<0.02	0.024	0.043	NS
Metals - Dissolved																			
Aluminum, dissolved	mg/L	NA	NA	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	NS	<0.2	<0.2	<0.2	NS
Antimony, dissolved	mg/L	0.006	0.006	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01	<0.01	<0.01	NS
Arsenic, dissolved	mg/L	0.05	0.01	**0.23**	<0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	NS	<0.01	<0.01	<0.01	NS
Barium, dissolved	mg/L	2	2	0.21	0.28	0.22	<0.2	<0.2	0.39	0.21	0.20	0.24	0.30	<0.2	NS	0.67	0.21	<0.2	NS
Beryllium, dissolved	mg/L	0.004	0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	<0.005	NS
Boron, dissolved	mg/L	2	NA	**29.1**	0.37	0.54	<0.2	<0.2	0.28	<0.2	0.43	<0.2	0.67	<0.2	NS	0.61	**3.8**	0.77	NS
Cadmium, dissolved	mg/L	0.005	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NS	<0.002	<0.002	<0.002	NS
Calcium, dissolved	mg/L	NA	NA	187	137	187	163	192	159	158	159	113	311	193	NS	122	324	14	NS
Chromium, dissolved	mg/L	0.1	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	<0.005	NS
Cobalt, dissolved	mg/L	1	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05	<0.05	<0.05	NS
Copper, dissolved	mg/L	0.65	1.3	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NS	<0.025	<0.025	<0.025	NS
Iron, dissolved	mg/L	5	NA	4	3.1	*18.4*	*6.0*	*7.8*	*16.3*	*25.0*	0.15	1.8	*6.4*	*17.8*	NS	*7.6*	2.4	0.09	NS
Lead, dissolved	mg/L	0.0075	0.015	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	NS	<0.003	<0.003	<0.003	NS
Magnesium, dissolved	mg/L	NA	NA	179	78.7	104	67.2	91.6	82.6	54.7	66.7	71.2	140	78.1	NS	70.5	81.3	7.9	NS
Manganese, dissolved	mg/L	0.15	NA	*0.25*	0.029	*0.43*	0.085	*0.24*	*0.16*	*0.41*	0.15	0.024	*0.24*	*0.22*	NS	0.033	*1.10*	<0.015	NS
Mercury, dissolved	mg/L	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NS	<0.0002	<0.0002	<0.0002	NS
Nickel, dissolved	mg/L	0.1	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.067	<0.04	NS	<0.04	<0.04	<0.04	NS
Potassium, dissolved	mg/L	NA	NA	59.8	26.9	21	3.1	<5	21.1	<5	12.2	<5	161	7.4	NS	37.9	9.1	<5	NS
Selenium, dissolved	mg/L	0.05	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	0.0059	0.013	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	<0.005	NS
Sodium, dissolved	mg/L	NA	NA	178	76	27.8	49.9	55.8	60	26	149	66.3	861	49.9	NS	77.6	132	101	NS
Vanadium, dissolved	mg/L	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05	<0.05	<0.05	NS
Zinc, dissolved	mg/L	5	NA	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NS	<0.02	<0.02	0.053	NS

Notes:
Exceedance of IAC 620.410 Class I Standards indicated by *0.43*
Exceedance of IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by **0.26**
NA - Not Available
NS - Not Sampled

Table 3
Summary of Analytical Results
Second Quarter 2002 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	MW-406	MW-A	MW-B	MW-C	MW-D	MW-E1	MW-E2	MW-F	MW-G	LW-101	LW-102	LW-103
				SZ	LO	LO	LO	LO	SZ	LO	LO	SZ	LO	LO	LO
Field Parameters															
Dissolved Oxygen	mg/L	NA	NA	0.44	0.00	0.59	0.14	0.00	0.84	0.00	0.36	0.00	0.43	0.00	0.00
Ferrous Iron	ppm	NA	NA	4.62	2.61	0.94	3.26	3.49	0.91	4.04	1.31	2.82	10.48	NA	16.90
pH	s.u.	6.5-9.0	NA	6.89	7.21	7.75	7.53	6.97	7.56	6.89	7.19	7.45	6.88	7.52	6.56
Redox Potential	mV	NA	NA	-96	-110	-104	-73	-95	49	-92	9	-141	-130	-72	-108
Specific Conductivity	umhos	NA	NA	2110	1020	6070	789	2100	492	1800	3170	5790	1820	1900	2750
Temperature	deg. C	NA	NA	16.46	14.60	16.49	18.37	14.66	14.79	13.59	15.56	13.30	17.71	13.69	15.69
Turbidity	ntu	NA	1	67.20	3.16	307.00	>1000	8.98	25.40	2.20	96.50	4.79	267.00	89.00	267.00
Volatile Organic Compounds															
1,1,2,2-Tetrachloroethane	ug/L	NA	NA	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
1,2-Dichlorobenzene	ug/L	600	600	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
1,2-Dichloroethane	ug/L	5	5	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
1,2-Dichloroethene	ug/L	70	70	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
1,4-Dichlorobenzene	ug/L	75	75	NS	<1	NS	NS	NS	<1	<1	NS	NS	2.9	<1	<3.3
2-Butanone	ug/L	NA	NA	NS	<10	NS	NS	NS	<10	<10	NS	NS	<10	<10	<33
4-Methyl-2-Pentanone	ug/L	NA	NA	NS	<10	NS	NS	NS	<10	<10	NS	NS	<10	<10	<33
Acetone	ug/L	NA	NA	NS	<10	NS	NS	NS	<10	<10	NS	NS	<10	<10	<33
Benzene	ug/L	5	5	NS	<1	NS	NS	NS	<1	<1	NS	NS	4	**10**	4.6
Bromodichloromethane	ug/L	NA	NA	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
Chlorobenzene	ug/L	NA	100	NS	<1	NS	NS	NS	<1	<1	NS	NS	6.4	<1	9.8
Chloroethane	ug/L	NA	NA	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
Chloroform	ug/L	NA	NA	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
Ethylbenzene	ug/L	700	700	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	16
Freon 113	ug/L	NA	NA	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
Methylene chloride	ug/L	5	5	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
Styrene	ug/L	100	100	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
Tetrachloroethene	ug/L	5	5	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
Toluene	ug/L	1000	1000	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	110
Trichloroethene	ug/L	5	5	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
Vinyl chloride	ug/L	2	2	NS	7.1	NS	NS	NS	<1	<1	NS	NS	<1	<1	<3.3
Xylenes, total	ug/L	10000	10000	NS	<1	NS	NS	NS	<1	<1	NS	NS	<1	<1	24
Metals/Inorganics - Total															
Aluminum, total	mg/L	NA	NA	NS	<0.2	NS	NS	NS	<0.2	<0.2	NS	NS	<0.2	0.91	0.83
Antimony, total	mg/L	0.006	0.006	NS	<0.01	NS	NS	NS	<0.01	<0.01	NS	NS	<0.01	<0.01	<0.01
Arsenic, total	mg/L	0.05	0.01	NS	<0.01	NS	NS	NS	<0.01	<0.01	NS	NS	<0.01	<0.01	<0.01
Barium, total	mg/L	2	2	NS	<0.2	NS	NS	NS	<0.2	0.59	NS	NS	0.35	0.37	0.38
Beryllium, total	mg/L	0.004	0.004	NS	<0.005	NS	NS	NS	<0.005	<0.005	NS	NS	<0.005	<0.005	<0.005
Boron, total	mg/L	2	NA	NS	0.28	NS	NS	NS	<0.2	0.55	NS	NS	0.41	0.41	0.86
Cadmium, total	mg/L	0.005	0.005	NS	<0.002	NS	NS	NS	<0.002	<0.002	NS	NS	<0.002	<0.002	<0.002
Calcium, total	mg/L	NA	NA	NS	113	NS	NS	NS	22.5	176	NS	NS	338	239	257

Notes:
Freon 113 is 1,1,2-Trichloro-1,2,2-trifluoroethane.
Exceedance of IAC 620.410 Class I Standards indicated by *0.43*
Exceedance of IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by **0.26**
NA - Not Available
NS - Not Sampled

Table 3
Summary of Analytical Results
Second Quarter 2002 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	MW-406	MW-A	MW-B	MW-C	MW-D	MW-E1	MW-E2	MW-F	MW-G	LW-101	LW-102	LW-103
				SZ	LO	LO	LO	LO	SZ	LO	LO	SZ	LO	LO	LO
Metals/Inorganics - Total (continued)															
Chromium, total	mg/L	0.1	0.1	NS	<0.005	NS	NS	NS	<0.005	<0.005	NS	NS	<0.005	<0.005	0.012
Cobalt, total	mg/L	1	NA	NS	<0.05	NS	NS	NS	<0.05	<0.05	NS	NS	<0.05	<0.05	<0.05
Copper, total	mg/L	0.65	1.3	NS	<0.025	NS	NS	NS	<0.025	<0.025	NS	NS	<0.025	<0.025	<0.025
Cyanide, total	mg/L	0.02	0.2	NS	<0.01	NS	NS	NS	<0.01	<0.01	NS	NS	<0.01	<0.01	<0.01
Iron, total	mg/L	5	NA	NS	2.9	NS	NS	NS	0.94	4	NS	NS	*20.2*	*5.8*	*37.9*
Lead, total	mg/L	0.0075	0.015	NS	<0.003	NS	NS	NS	<0.003	<0.003	NS	NS	0.0039	**0.016**	*0.0097*
Magnesium, total	mg/L	NA	NA	NS	74.9	NS	NS	NS	5.3	94.7	NS	NS	71.4	132	123
Manganese, total	mg/L	0.15	NA	NS	0.028	NS	NS	NS	<0.015	0.079	NS	NS	*0.48*	*0.43*	*0.47*
Mercury, total	mg/L	0.002	0.002	NS	<0.0002	NS	NS	NS	<0.0002	<0.0002	NS	NS	<0.0002	<0.0002	<0.0002
Nickel, total	mg/L	0.1	NA	NS	<0.04	NS	NS	NS	<0.04	<0.04	NS	NS	<0.04	<0.04	<0.04
Potassium, total	mg/L	NA	NA	NS	<5	NS	NS	NS	19	22.3	NS	NS	6.3	20.9	33.5
Selenium, total	mg/L	0.05	0.05	NS	<0.005	NS	NS	NS	<0.005	<0.005	NS	NS	<0.005	<0.005	<0.005
Sodium, total	mg/L	NA	NA	NS	38	NS	NS	NS	71.6	141	NS	NS	11	43.5	158
Vanadium, total	mg/L	NA	NA	NS	<0.05	NS	NS	NS	<0.05	<0.05	NS	NS	<0.05	<0.05	<0.05
Zinc, total	mg/L	5	NA	NS	<0.02	NS	NS	NS	0.46	<0.02	NS	NS	<0.02	0.039	0.071
Metals - Dissolved															
Aluminum, dissolved	mg/L	NA	NA	NS	<0.2	NS	NS	NS	<0.2	<0.2	NS	NS	<0.2	<0.2	0.51
Antimony, dissolved	mg/L	0.006	0.006	NS	<0.01	NS	NS	NS	<0.01	<0.01	NS	NS	<0.01	<0.01	<0.01
Arsenic, dissolved	mg/L	0.05	0.01	NS	<0.01	NS	NS	NS	<0.01	<0.01	NS	NS	<0.01	<0.01	<0.01
Barium, dissolved	mg/L	2	2	NS	<0.2	NS	NS	NS	<0.2	0.57	NS	NS	0.36	0.34	0.31
Beryllium, dissolved	mg/L	0.004	0.004	NS	<0.005	NS	NS	NS	<0.005	<0.005	NS	NS	<0.005	<0.005	<0.005
Boron, dissolved	mg/L	2	NA	NS	0.28	NS	NS	NS	<0.2	0.53	NS	NS	0.43	0.41	0.94
Cadmium, dissolved	mg/L	0.005	0.005	NS	<0.002	NS	NS	NS	<0.002	<0.002	NS	NS	<0.002	<0.002	<0.002
Calcium, dissolved	mg/L	NA	NA	NS	116	NS	NS	NS	25.6	170	NS	NS	341	232	246
Chromium, dissolved	mg/L	0.1	0.1	NS	<0.005	NS	NS	NS	<0.005	<0.005	NS	NS	<0.005	<0.005	0.013
Cobalt, dissolved	mg/L	1	NA	NS	<0.05	NS	NS	NS	<0.05	<0.05	NS	NS	<0.05	<0.05	<0.05
Copper, dissolved	mg/L	0.65	1.3	NS	<0.025	NS	NS	NS	<0.025	<0.025	NS	NS	<0.025	<0.025	<0.025
Iron, dissolved	mg/L	5	NA	NS	2.9	NS	NS	NS	0.076	3.9	NS	NS	*18.4*	1.2	*33.4*
Lead, dissolved	mg/L	0.0075	0.015	NS	<0.003	NS	NS	NS	<0.003	<0.003	NS	NS	<0.003	<0.003	<0.003
Magnesium, dissolved	mg/L	NA	NA	NS	76.7	NS	NS	NS	8.7	91.5	NS	NS	72	128	121
Manganese, dissolved	mg/L	0.15	NA	NS	0.028	NS	NS	NS	<0.015	0.075	NS	NS	*0.47*	*0.36*	*0.44*
Mercury, dissolved	mg/L	0.002	0.002	NS	<0.0002	NS	NS	NS	<0.0002	<0.0002	NS	NS	<0.0002	<0.0002	<0.0002
Nickel, dissolved	mg/L	0.1	NA	NS	<0.04	NS	NS	NS	<0.04	<0.04	NS	NS	<0.04	<0.04	<0.04
Potassium, dissolved	mg/L	NA	NA	NS	<5	NS	NS	NS	17.1	21.6	NS	NS	6.4	19.1	35.2
Selenium, dissolved	mg/L	0.05	0.05	NS	<0.005	NS	NS	NS	<0.005	<0.005	NS	NS	<0.005	<0.005	<0.005
Sodium, dissolved	mg/L	NA	NA	NS	38.7	NS	NS	NS	76	137	NS	NS	11	41	163
Vanadium, dissolved	mg/L	NA	NA	NS	<0.05	NS	NS	NS	<0.05	<0.05	NS	NS	<0.05	<0.05	<0.05
Zinc, dissolved	mg/L	5	NA	NS	<0.02	NS	NS	NS	0.3	<0.02	NS	NS	<0.02	<0.02	<0.02

Notes:

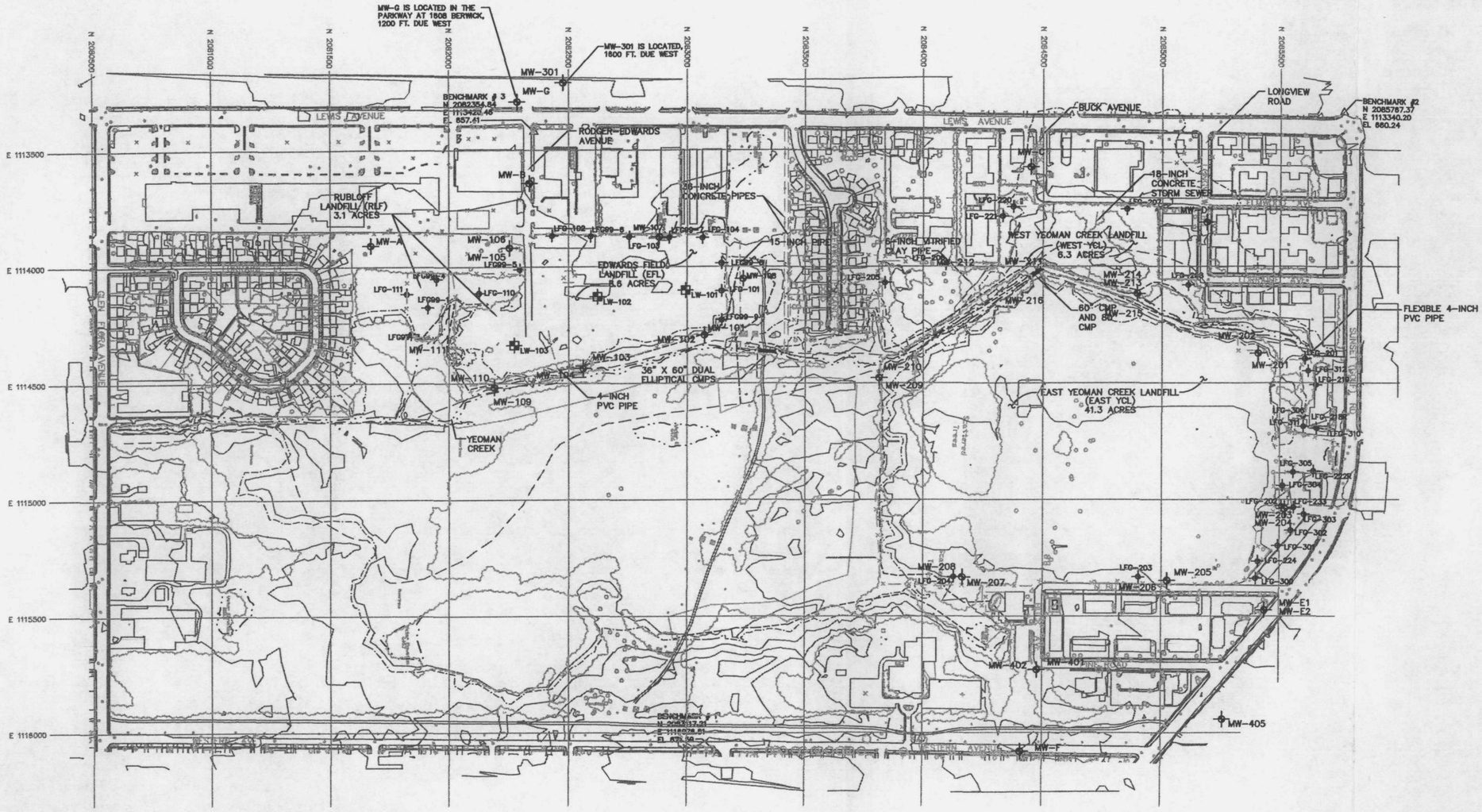
Exceedance of IAC 620.410 Class I Standards indicated by *0.43*

Exceedance of IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by **0.26**

NA - Not Available

NS - Not Sampled

Figures



LEGEND

- APPROXIMATE LIMIT OF WASTE
- APPROXIMATE PROPERTY LINE
- MW-201 GROUNDWATER MONITORING WELL
- LW-201 LEACHATE WELL
- LFG99-8 GAS PROBE
- SURFACE WATER
- TREE LINE
- EXISTING ROAD
- EXISTING TREE
- HOUSE OR STRUCTURE
- SIDEWALK
- EXISTING FENCE
- BENCHMARK

NOTE: LEACHATE WELL LW-201, LW-202, LW-203, AND LW-204 WERE DECOMMISSIONED PRIOR TO THE JUNE 2002 EVENT.

NOTE: DRAWING ADAPTED FROM DRAWING NO. 2 OF 29 FROM GEOSYNTEC CONSULTANTS, JOB No. 000864-8.4, DATED APRIL 27, 2001 (REMEDIAL DESIGN, YEOMAN CREEK LANDFILL SUPERFUND SITE, WAUKEGAN, ILLINOIS).

SCALE

0 250' 500' 1,000'

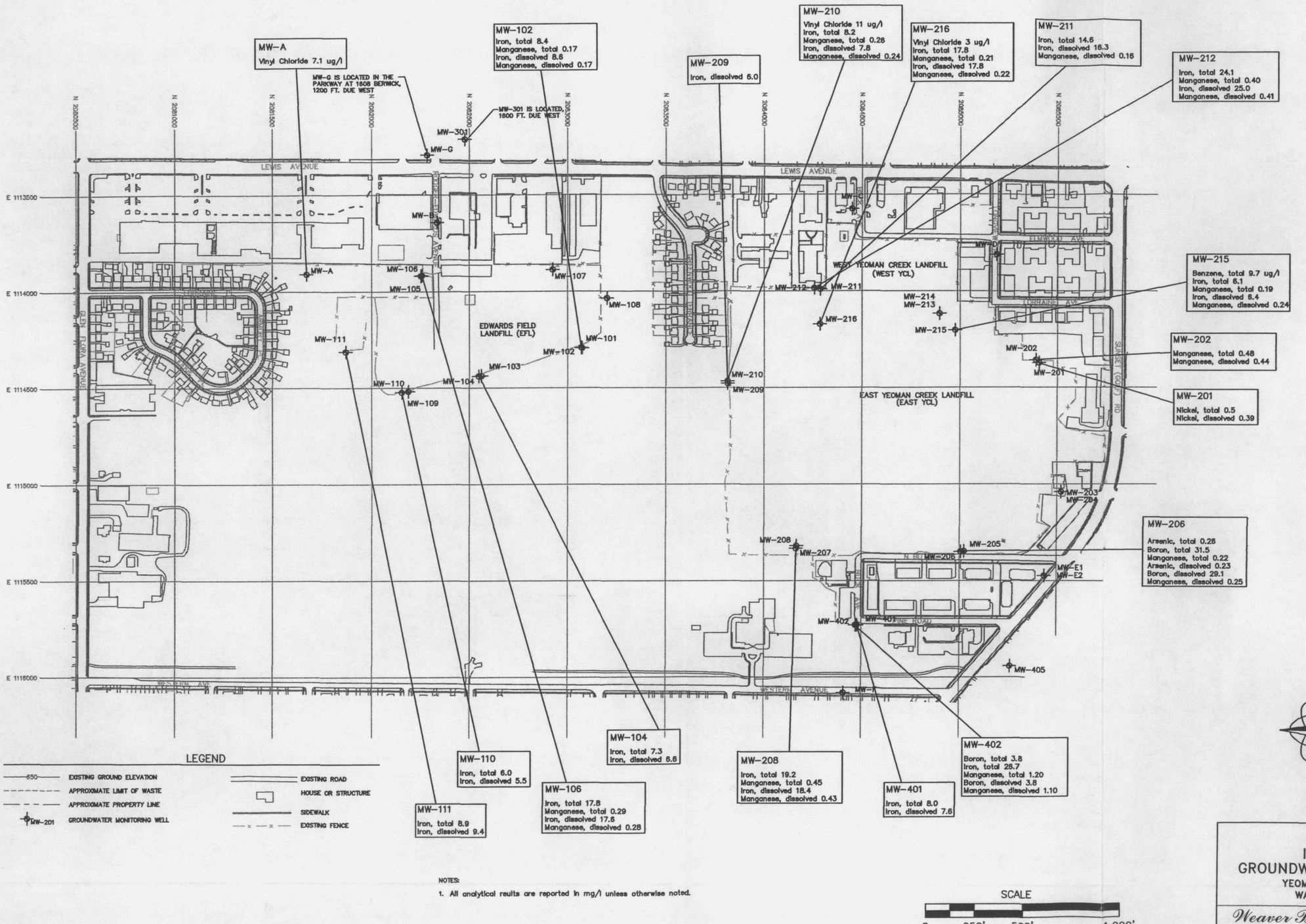
NORTH

MONITORING WELL LOCATIONS

YEOMEN CREEK LANDFILL
WAUKEGAN, ILLINOIS

Weaver Boos & Gordon, Inc.
GRIFFITH, IN ALBUQUERQUE, NM | CHICAGO, IL (312) 922-1030 | GLEN ELLYN, IL SPRINGFIELD, IL

DRAWN BY: REK	DATE: 08/15/02	FILE: 0081300-04
REVIEWED BY: AP	CAD:LOCATIONS.DWG	FIGURE 1



LEGEND

- 650 — EXISTING GROUND ELEVATION
- APPROXIMATE LIMIT OF WASTE
- APPROXIMATE PROPERTY LINE
- MW-201 GROUNDWATER MONITORING WELL
- EXISTING ROAD
- HOUSE OR STRUCTURE
- SIDEWALK
- EXISTING FENCE

NOTES:

1. All analytical results are reported in mg/l unless otherwise noted.

SCALE

0 250' 500' 1,000'

NORTH

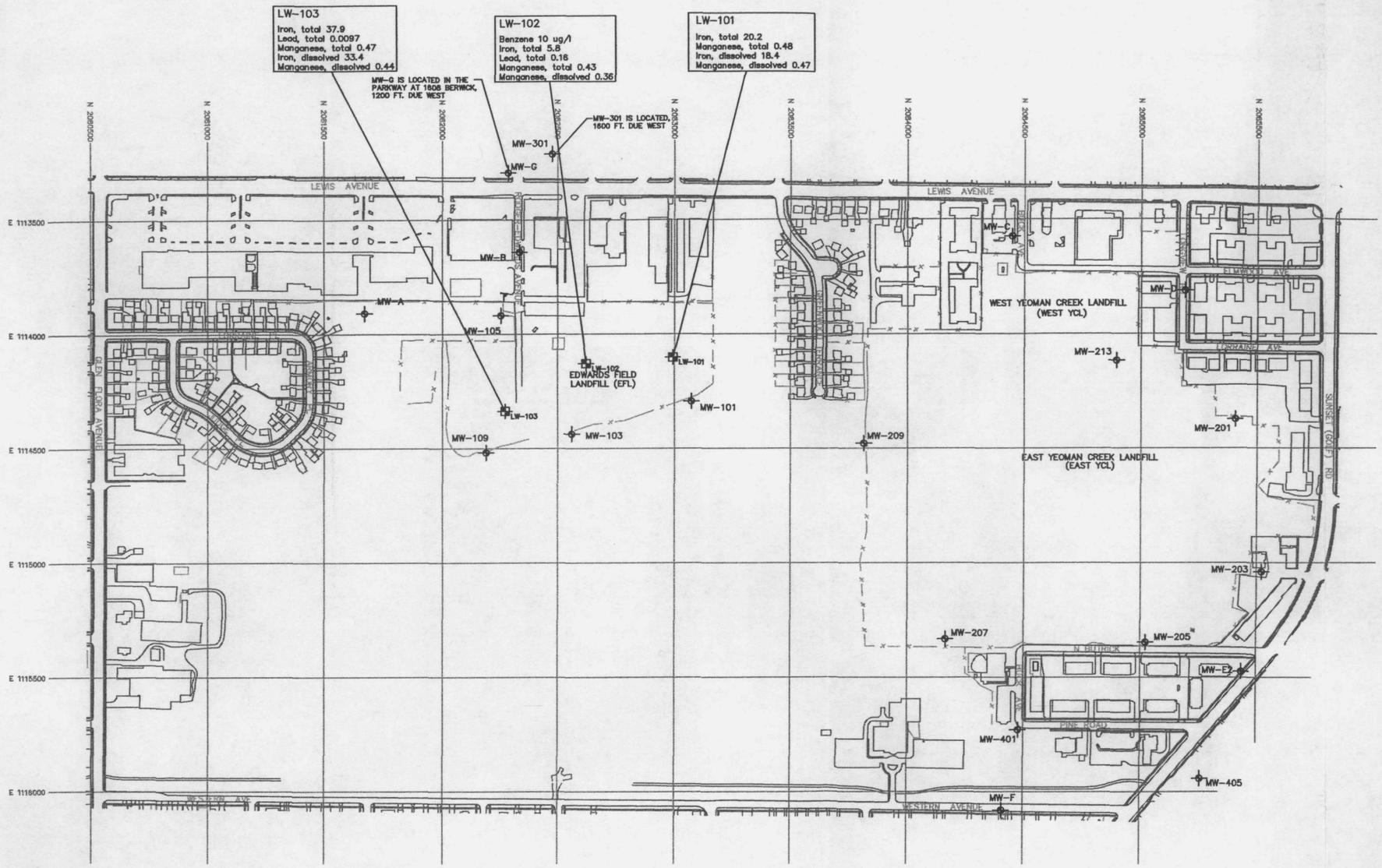
JUNE 2002
IAC 620.410
GROUNDWATER EXCEEDENCES
YEOMEN CREEK LANDFILL
WAUKEGAN, ILLINOIS

Weaver Boos & Gordon, Inc.

GRIFFITH, IN
ALBUQUERQUE, NM
CHICAGO, IL
(312) 922-1030
GLEN ELLYN, IL
SPRINGFIELD, IL

DRAWN BY: RGB	DATE: 09/03/02	FILE: 0081300-04
REVIEWED BY: AP	CAD:0602GW_EXCEED	FIGURE 2

NOTE: DRAWING ADAPTED FROM DRAWING NO. 2 OF 29 FROM GEOSYNTEC CONSULTANTS, JOB No. 000864-8.4, DATED APRIL 27, 2001 (REMEDIAL DESIGN, YEOMAN CREEK LANDFILL SUPERFUND SITE, WAUKEGAN, ILLINOIS).



LEGEND

- 650 — EXISTING GROUND ELEVATION
- APPROXIMATE LIMIT OF WASTE
- APPROXIMATE PROPERTY LINE
- LW-101 LEACHATE WELL
- MW-201 GROUNDWATER MONITORING WELL
- 646 GROUNDWATER CONTOUR
- EXISTING ROAD
- HOUSE OR STRUCTURE
- SIDEWALK
- EXISTING FENCE

NOTES:

1. All analytical reults are reported in mg/l unless otherwise noted.

NOTE: LEACHATE WELL LW-201, LW-202, LW-203, AND LW-204 WERE DECOMMISSIONED PRIOR TO THE JUNE 2002 EVENT.

NOTE: DRAWING ADAPTED FROM DRAWING NO. 2 OF 29 FROM GEOSYNTEC CONSULTANTS, JOB No. 000864-8.4, DATED APRIL 27, 2001 (REMEDIAL DESIGN, YEOMAN CREEK LANDFILL SUPERFUND SITE, WAUKEGAN, ILLINOIS).

SCALE

0 250' 500' 1,000'

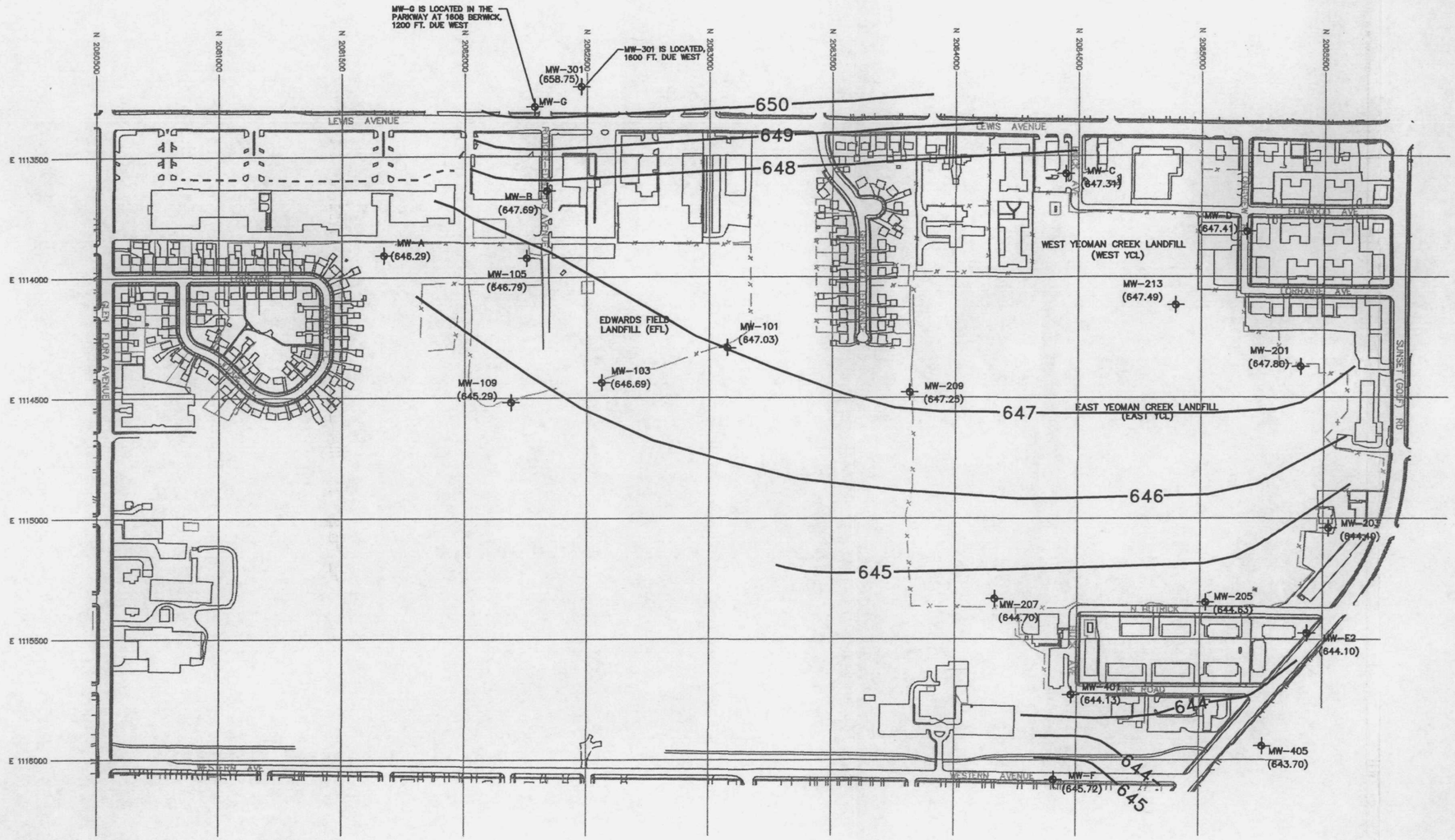
NORTH

JUNE 2002
IAC 620.410
LEACHATE EXCEEDENCES

YEOMEN CREEK LANDFILL
WAUKEGAN, ILLINOIS

Weaver Boos & Gordon, Inc.
GRIFFITH, IN ALBUQUERQUE, NM
CHICAGO, IL (312) 922-1030
GLEN ELLYN, IL SPRINGFIELD, IL

DRAWN BY: RGB	DATE: 09/03/02	FILE: 0081300-04
REVIEWED BY: AP	CAD:0802LEACH_EXCEED	FIGURE 3



LEGEND

- 650 — EXISTING GROUND ELEVATION
- APPROXIMATE LIMIT OF WASTE
- APPROXIMATE PROPERTY LINE
- MW-201 GROUNDWATER MONITORING WELL
- 646 GROUNDWATER CONTOUR
- EXISTING ROAD
- HOUSE OR STRUCTURE
- SIDEWALK
- EXISTING FENCE

NORTH

SCALE

0 250' 500' 1,000'

NOTE: WATER LEVEL OBTAINED ON JUNE 21 & 22, 2002.

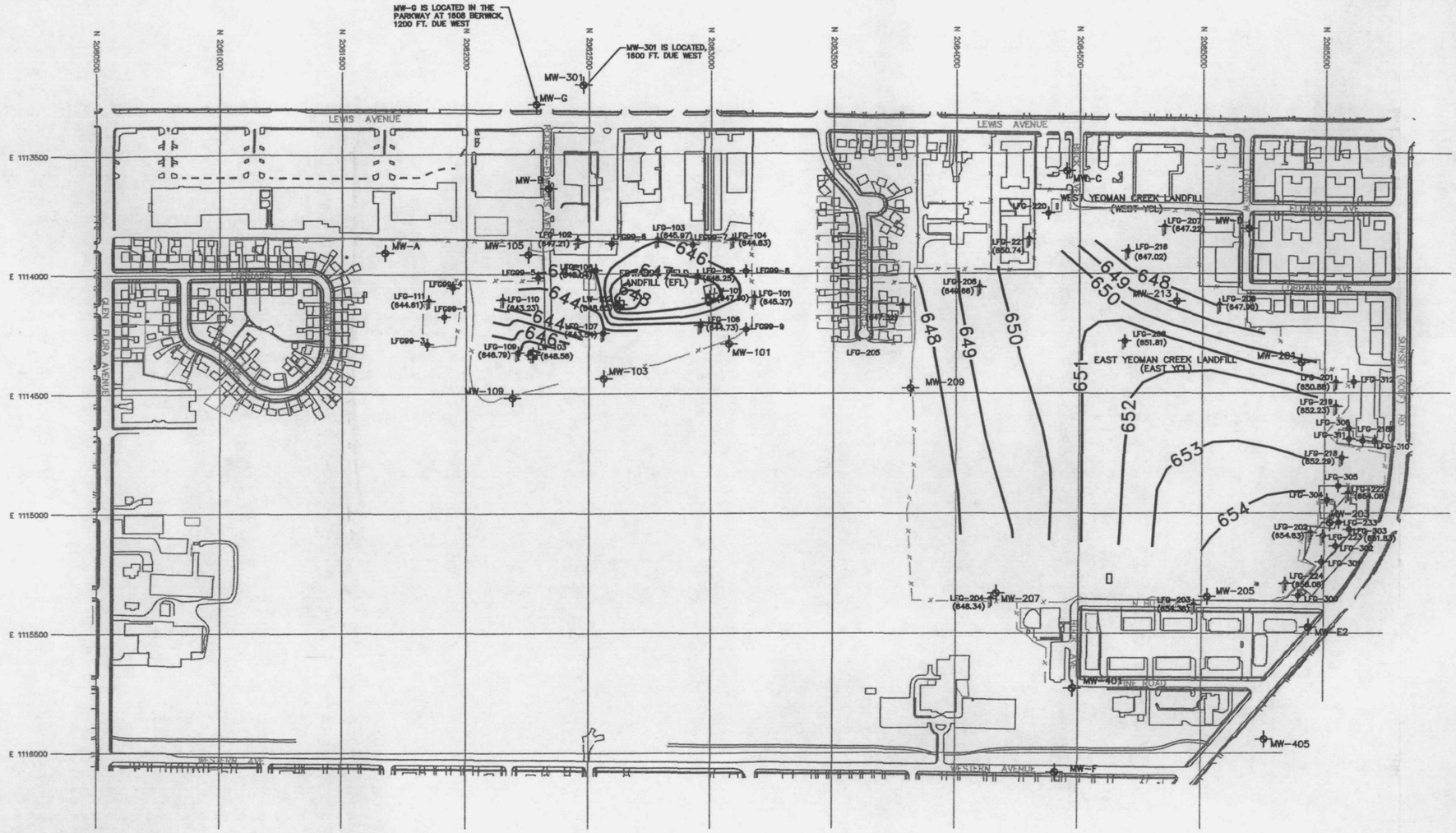
NOTE: DRAWING ADAPTED FROM DRAWING NO. 2 OF 29 FROM GEOSYNTEC CONSULTANTS, JOB No. 000864-8.4, DATED APRIL 27, 2001 (REMEDIAL DESIGN, YEOMAN CREEK LANDFILL SUPERFUND SITE, WAUKEGAN, ILLINOIS).

JUNE 2002 POTENTIOMETRIC SURFACE MAP FOR LOWER OUTWASH

YEOMEN CREEK LANDFILL
WAUKEGAN, ILLINOIS

Weaver Boos & Gordon, Inc.
GRIFFITH, IN ALBUQUERQUE, NM | CHICAGO, IL (312) 922-1030 | GLEN ELLYN, IL SPRINGFIELD, IL

DRAWN BY: REK	DATE: 08/15/02	FILE: 0081300-04
REVIEWED BY: AP	CAD:0602GWLOW.DWG	FIGURE 4



LEGEND

- 850 — EXISTING GROUND ELEVATION
- APPROXIMATE LIMIT OF WASTE
- APPROXIMATE PROPERTY LINE
- MW-201 GROUNDWATER MONITORING WELL
- 646 GROUNDWATER CONTOUR
- LW-201 LEACHATE WELL
- LFG99-8 GAS PROBE
- EXISTING ROAD
- HOUSE OR STRUCTURE
- SIDEWALK
- EXISTING FENCE

NOTE: LEACHATE WELL LW-201, LW-202, LW-203, AND LW-204 WERE DECOMMISSIONED PRIOR TO THE JUNE 2002 EVENT.

NOTE: DRAWING ADAPTED FROM DRAWING NO. 2 OF 29 FROM GEOSYNTEC CONSULTANTS, JOB No. 000864-8.4, DATED APRIL 27, 2001 (REMEDIAL DESIGN, YEOMAN CREEK LANDFILL SUPERFUND SITE, WAUKEGAN, ILLINOIS).

SCALE

0 250' 500' 1,000'

NORTH

JUNE 2002 POTENTIOMETRIC SURFACE MAP FOR LEACHATE WELLS

YEOMEN CREEK LANDFILL
WAUKEGAN, ILLINOIS

Weaver Boos & Gordon, Inc.
GRIFFITH, IN ALBUQUERQUE, NM
CHICAGO, IL (312) 922-1030
GLEN ELLYN, IL SPRINGFIELD, IL

DRAWN BY: REK	DATE: 08/15/02	FILE: 0081300-04
REVIEWED BY: AP	CAD:0602LEACHATE.DWG	FIGURE 5

Attachment 1

Data Validation Report

Exponent

Exponent
4000 Kruse Way Place
Building 2, Suite 285
Lake Oswego, OR 97035

telephone 503-636-4338
facsimile 503-636-4315
www.exponent.com

September 9, 2002

Amy Powers
Weaver Boos & Gordon, Inc.
200 South Michigan Avenue
Chicago, Illinois 60604

Subject: Data Validation Report for Yeoman Creek Landfill Superfund Site
Exponent Contract No. 8601524.001 0601

Dear Amy:

This letter documents the results of a quality assurance (QA) review of data reported for the analysis of inorganic and organic compounds associated with the associated with the Yeoman Creek Landfill Superfund Site. Five data packages were submitted to Exponent® by Severn Trent Services for validation in work orders A2G190236, A2G020228, A2G030266, A2F270200, and A2F290108.

The QA review was conducted to verify that the laboratory quality assurance and quality control (QA/QC) procedures were documented and that the quality of the data is sufficient to support their use for the intended purposes. The QA review included evaluating the applicable QC results reported by the laboratory. A summary of the overall quality of the analytical results and the data validation procedures used to complete the analyses is presented below.

A bulleted list of the qualifiers assigned to selected data in all the work orders is included in Attachment A of this letter. Qualifiers assigned during the QA review were also added to the electronic spreadsheets in a column labeled "Validation Qualifier" that was inserted into each spreadsheet. The electronic spreadsheets are included in the CD-ROM accompanying this letter.

Overall Quality of the Analytical Results

The results for all applicable QC procedures employed by the laboratory during analysis of the samples were generally acceptable. Some sample results required qualification because one or more QC criteria were not met. For the organic target analyte analyses, the laboratory assigned a *J* flag to all results reported as detected at a concentration between the method detection limit and method reporting limit to indicate these results should be considered estimated. These laboratory-qualified data were additionally assigned a *JQ* qualifier during the QA review. For the metals analyses, the laboratory assigned a *B* flag to all results reported as detected at a concentration between the instrument detection limit and method reporting limit. For these laboratory-flagged data, no validation qualifiers were required.

A summary of the qualified data is presented in Attachment A.

Data Validation Procedures

Data validation procedures included evaluating the sample results and applicable QC results reported by the laboratory. The data were validated in accordance with guidance specified by the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (U.S. EPA 1994) for metals and conventional parameter analyses and the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (U.S. EPA 1999) for organic analyses, as specified in the project quality assurance project plan (WBG 1999). Data qualifiers were assigned during the QA reviews if applicable control limits were not met, in accordance with U.S. EPA (1994, 1999) and the QC requirements stated in the methods. All data qualified as estimated (*J*) have an acceptable degree of uncertainty and represent data of good quality and reasonable confidence (U.S. EPA 1989).

The following laboratory deliverables were reviewed during data validation:

- The case narrative discussing analytical problems (if any) and procedures
- Chain-of-custody documentation
- Instrument calibration data
- Method blanks to check for laboratory contamination
- Results for laboratory control sample (LCS) analyses (i.e., blank spikes) and matrix spike/matrix spike duplicate (MS/MSD) analyses to assess analytical accuracy
- Results for laboratory duplicate sample and/or MSD analyses, as applicable, to assess analytical precision
- Results for field quality control samples
- Analytical results for analyses performed.

Should you have any questions regarding the information presented herein, please call me at (503) 636-4338.

Sincerely,

James J. Mc Ateer, Jr.
Project Manager

cc: Mike Maxwell, Weaver Boos & Gordon

Attachments

References

U.S. EPA. 1989. J-qualified CLP data and recommendations for its use. Memorandum from H.M. Fribush, Technical Project Officer, Analytical Operations Branch, to S. Wells, Chief, NPL Criteria Section, Site Assessment Branch. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

U.S. EPA. 1994. USEPA Contract Laboratory Program national functional guidelines for inorganic data review. EPA 540/R-94/013. February 1994. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

U.S. EPA. 1999. USEPA Contract Laboratory Program national functional guidelines for organic data review. EPA/540/R-99/008. October 1999. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC.

WBG. 1999. Pre-design data collection work plan, Appendix B: quality assurance project plan for Yeoman Creek Landfill Superfund Site. Revision II, revised August 1999. Prepared by Parsons Engineering Science, Inc., Oak Brook, IL. Prepared for Weaver Boos & Gordon, Chicago, IL.

Attachment A

Qualifiers Assigned to Data

Attachment A

Summary of Data Qualifiers

The following quality control (QC) criteria were not met, resulting in the qualification of selected data:

- Five chromium results were restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2G190236 because the metal was detected in the associated method blanks.
- One potassium result was restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2G190236 because the metal was present in the associated method blanks.
- Two aluminum results were restated as undetected (assigned a *UF* qualifier) at the concentration reported in work order A2G190236 because the metal was present in the associated field blank.
- All acetone, 2-butanone, and 2-hexanone results (10 samples and 1 trip blank) were globally qualified as estimated (assigned a *JC* qualifier) in work order A2G30266 because percent deviation (%D) control limits were exceeded in the continuing calibration verification samples.
- All acetone results (10 samples and 1 trip blank) were restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2G030266 because the compound was present in the associated method blank.
- One methylene chloride result was restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2G030266 because the compound was present in the associated method blank.
- Three 2-butanone results were restated as undetected (assigned a *UF* qualifier) at the concentration reported in work order A2G030266 because the compound was present in the associated trip blank.
- One boron result was restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2G030266 because the metal was present in the associated method blank.
- One methylene chloride result was restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2F290108 because the compound was present in the associated method blank.

- All acetone results (5 samples) were globally qualified as estimated (assigned a *JC* qualifier) in work order A2F290108 because %D control limits were exceeded in the continuing calibration verification samples.

- Ten potassium and 5 zinc samples were qualified as estimated (assigned a *JE* qualifier) in work order A2F290108 because %D control limits were exceeded in the serial dilution sample.

- Fifteen copper and 4 potassium results were restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2F270200 because the metals were present in the associated method blanks.

- Twenty acetone, 9 2-butanone, 3 bromomethane, and 3 2-hexanone results were qualified as estimated (assigned a *JC* qualifier) in work order A2F270200 because %D control limits were exceeded in the continuing calibration verification samples.

- Eighteen acetone results were restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2F270200 because the compound was present in the associated method blanks.

- One 2-butanone result was restated as undetected (assigned a *UF* qualifier) at the concentration reported in work order A2F270200 because the compound was present in the associated trip blank.

- One methylene chloride result was restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2G020228 because the compound was present in the associated method blank.

- Nine acetone results were restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2G020228 because the compound was present in the associated method blanks.

- Nine acetone, 9 2-butanone, and 9 2-hexanone results were qualified as estimated (assigned a *JC* qualifier) in work order A2G020228 because %D control limits were exceeded in the continuing calibration verification samples.

- One boron, 1 calcium, 1 magnesium, 1 potassium, 14 aluminum, and 14 copper results were restated as undetected (assigned a *UB* qualifier) at the concentration reported in work order A2G20228 because the metals were present in the associated method blanks.

- Nine aluminum, 9 boron, 9 calcium, 9 magnesium, 9 potassium, and 9 sodium results were qualified as estimated (assigned a *JS* qualifier) in work order A2G20228 due to low recoveries in the matrix spike samples.

Qualifiers assigned during the QA review were also added to the electronic spreadsheets in a column labeled "Validation Qualifier" that was inserted into each electronic spreadsheet. The electronic spreadsheets are included in the CD-ROM accompanying this letter.

Note: In this report, descriptors (i.e., *C*, *L*, and *S*) accompany the *J* or *R* qualifers. These descriptors were included to define the reason for qualification.

GEOSYNTEC CONSULTANTS

55 W. Wacker Drive, Suite 1100
Chicago, Illinois 60601 • USA
Tel. (312) 658-0500 • Fax (312) 658-0576

13 September 2002
CHE8092

Mr. Matthew J. Ohl
Project Coordinator
United States Environmental Protection Agency
Region V- Mail Code SR-6J
77 W. Jackson Boulevard
Chicago, IL 60604

Subject: Construction-Phase Groundwater Monitoring Report – June 2002
Yeoman Creek Landfill Superfund Site
Waukegan, Illinois

Dear Mr. Ohl:

Enclosed is your copy of the June 2002 Groundwater Monitoring Report. Other copies of this report will be distributed separately. If you have any questions, please do not hesitate to contact the undersigned at (312) 658-0500 x 13.

Sincerely,

John Seymour, P.E.
YCRG Project Coordinator

cc: Patel (RF Weston)
E. Rednour (IEPA)
E. Karecki (USEPA)
T. Goeks (USEPA)
S. Davis (DNR)
Technical Committee

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